October 2017

Issue 19

THE SPECTRUM SHOW

Magazine

CENTIPEDE
CLONE SHOOTOUT

FLASHBACK 87

GAME REVIEWS

HARDWARE

SPECIAL FEATURES

MIND YOUR LANGUAGE
We get to machine code...

Includes material not in the video show!

CHEETAH SPECDRUM
A drum machine for your Speccy.

CONTENTS

12. CENTIPEDE
Arcade clone shootout.

34. PLAY MANCHESTER
Report from the recent show.

22. MIND YOUR LANGUAGE
Spectrum languages.

FEATURES

And more....

GAME REVIEWS

EDITORIAL

Welcome to issue 19 and thank you for taking the time to download and read it.

It's that time of year again when Play Manchester arrives in my neck of the woods, and I get to play great arcade games and meet up with friends for a chat and a pint.

This years event was probably the best one I've been to in Manchester. The arcade games were easy to get on and I played many favourites. Geoff and I went head to head on Star Wars, with Geoff just beating me.

The main event on Sunday was the Speccy Sunday Talk organised by the Retro Hour podcast guys. Jim Bagley, Steve Turner, Andrew Hewson, Rich Stevenson and John Hare, along with Andy Remic and others all chatted about their memories of the Spectrum and what it meant to them personally. It was well attended too, and finished with Andy's film, Memoirs of a Spectrum Addict.

You can find more details and pictures on page 34.

I spent a few pounds on some great old computer magazines and a few Spectrum games, but backed out of a potential Sony PSP purchase.

New Purchase

My last editorial spoke of wanting a DK'Tronics keyboard, and by a stroke of luck, I grabbed a bundle on eBay with one of these beauties included. The pack also included many games and a few interfaces, useful for future shows.

The keyboard needed a clean and the Speccy inside had some issues, so off it went to Mutant Caterpillar for a good service and repair. Now it is back and re-installed in the keyboard. Full review coming soon.

Happy Birthday!

On a different subject, The Spectrum Show reached its five year anniversary in April 2017, and I completely forgot it! I have been doing the show for five years, and it's still exciting to complete and upload a new episode. That said, the show cannot continue for ever, as the Spectrum's retail life ended and I will run out of things (other than games) to review as features.

I think 100 would be a fine target to aim for, but that means committing to continue for the next three or four years! It may sound scary, but then again the show has just hit the five year anniversary!

The imminent Spectrum Next may breathe some new life into the show, and other segments may go some way to keep it alive, but only time will tell. After all, the show is about the Sinclair Spectrum and not (as good as it may be) a modern computer.

Speccy Addict?

Check out the Kickstarter campaign for a new Speccy documentary, Speccy Addict Load "Film2" on the back page. Lots of memories and famous names from the past and present will be taking part. You know you want to….

Fancy writing a game review or special feature?

I am always looking for new content and all contributions are welcome.

CHART PROBLEMS

Mastertronic are still unhappy with the way the software charts are being handled and counted. If you recall a few months back, Gallop decided to include WHSmith in their sales counts, but Mastertronic titles were not available there, thereby, according to the budget label, skewing the charts. WHSmith then agreed to stock the games, but still Mastertronic are unhappy and are now considering legal action.

They claim that according to the charts, Mastertronic held a 10.5% share of the games sold over December, but they are adamant that they held at least double that, stating their sales figures as evidence. They sold 200,000 units in that month, meaning if that accounts for 10.5% then in total that would equate to over 2 million sales combined, which is simply not true.

The major problem is the limited outlets that Gallop use to calculate their weekly and monthly charts, using only WHsmith and Menzies. That leaves out other stores such as Boots, Woolworths and Toys R Us. The arguments continue.

GAUNTLET GOOF

It seems that some versions of the recently released game Gauntlet by US Gold will not load on the newer Plus 2 machines. US Gold informed users to be careful when buying the game because there are two versions currently in circulation.

The ones with the black coloured inlay will not work on the plus 2 or may have Kempston joystick problems. You will need to make sure you buy the game with the buff coloured inlay if you have the newer machine.

BAD PORTS

The argument between Boots and Amstrad is still rumbling on.

After Amstrad fixed the tape alignment problem, Boots have begun to stock the Plus 2 machines, however, they are still complaining about Amstrad's decision to make the joystick ports non-standard.

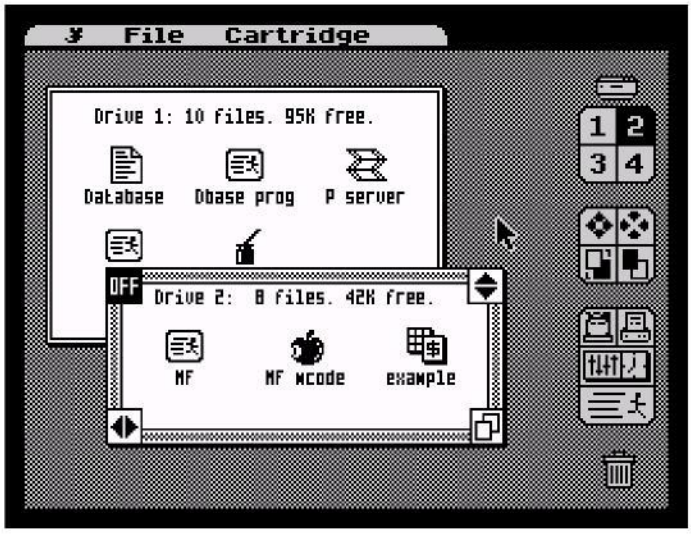
Instead of sticking the now familiar Kempston format, Amstrad have modified the ports to work only with their own joystick. Boots are trying to put pressure on Amstrad to reconsider the situation.

MAC COPY

With the availability of mice for the Spectrum, it was just a matter of time before someone came up with a front end that allows the same functionality as the more modern Macintosh machines.

Advanced Memory Systems have released such a beast, named Max Desktop, that works with the AMX mouse, and quite impressive it looks too.

Designed to work with Microdrives there are several now familiar features including a trashcan, notepad and settings.



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HAUNTED HEDGES

Micromega 1983

If you havn't guessed already, and the inlay certainly makes it easy, this is a typical Pac-man clone like so many early Spectrum games, but this one has a difference.

The first thing you notice is the graphics. There are no flat blue maze lines of the arcade, instead we get a quite impressive 3D effect that reminds me of games such as Android 2 or Cyclone. This game though came before those, and does look very nice.

The idea, if it needs explaining, is to eat all the dots, although the instructions ramble on about being in a spirit world, collecting gold coins, avoiding the guardians, picking up ice axes to enable you to kill the guardians, blahblah.. it's a Pacman game. Swap out those name for power pills, ghosts and bonus fruit and you get the idea.

There are 5 difficulty levels and these indicate how intelligent the ghosts are, and range from zero intelligence to super.

The graphics are nice but move in 8 pixel character jumps, but that doesn't really distract too much and it makes things easy when navigating the maze.

Sound is used well with various zaps for different things, and this keeps the player interested.

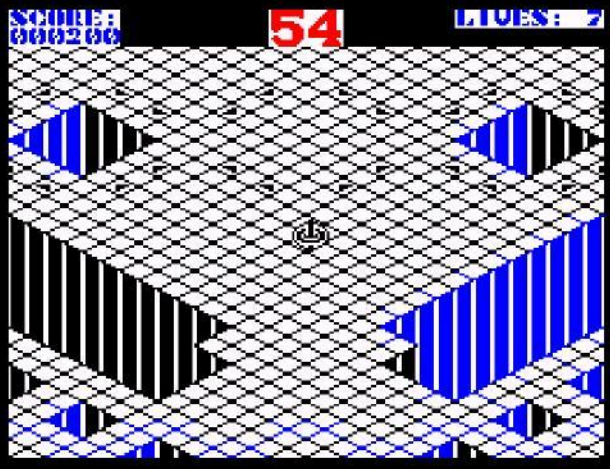
The ghosts, even on the easiest level seem to track you down and corner you in, although the game is still very playable. I wouldn't expect the intelligence or individuality of the arcade game in 9k.

There are random bonus items to collect and overall this is a nice little game that is just over 9k in size.

If you like Pacman games, this is certainly one to try.

GYROSCOPE

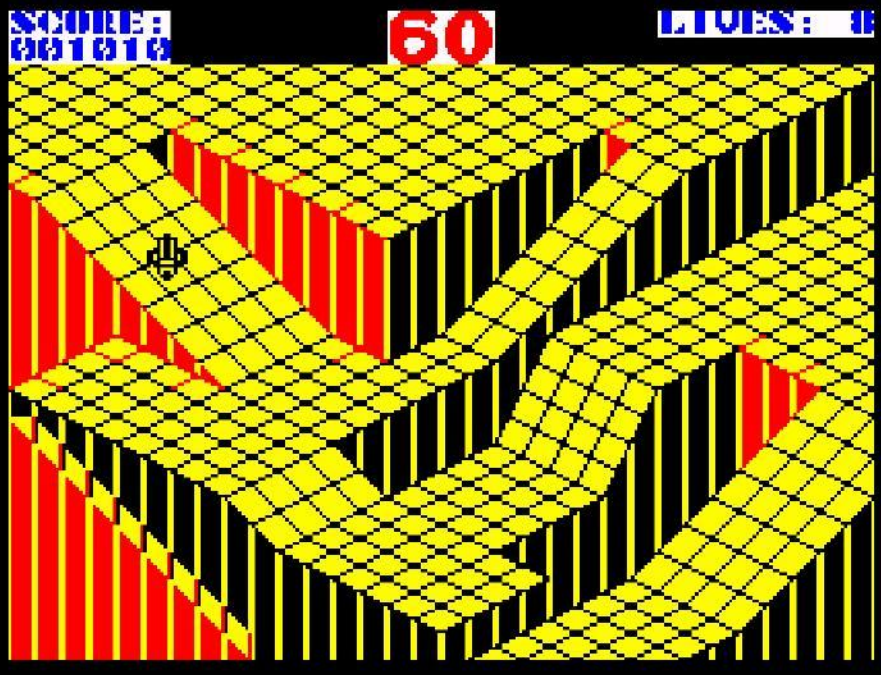
Melbourne House 1985



Gyroscope is, if you can't guess by the screen shots, a Marble Madness clone. You control a gyroscope instead of a marble, and try to negotiate down a series of screen to reach the final goal.

The landscapes have slopes of different angels, which cause your gyroscope to increase speed and if you're not careful, usually go flying off the edge.

There are also things floating about you have to avoid not to mention the wall that will instantly kill you, which is a bit unfair. This means you have to be almost pixel perfect and keep your gyroscope in the middle of the path and this may sound easy, but your gyroscope has inertia.



Moving in one direction causes the gyro to continue, changing direction is not instant, so you do have to try and plan your route.

The controls, because of the inertia, feel slow to respond, but once you get used to them, they reflect the movement of a gyroscope well. When you move from screen to screen, the colour flips to magenta before scrolling, which is very off-putting, and can sometimes cause you to lose the path you were aiming for – which is usually white. There is a time limit too so you can't hang around.

There are the usual ground based controls that cause you to veer off course, so yet another thing to be aware of.

Graphics are, apart from the magenta swap, well drawn, and look nice. There are some nice tunes, even on a 48k machine, and the sound is adequate with a few spot effects for different things.

I found the game a little tricky, the inertia was sometimes difficult to anticipate and the collisions with walls it a real frustration. It would have been better to allow this, and just have the pits, drops and evil floating things to kill you.

If you like marble madness, certainly give this a try.

OLLI & LISSA III
The Candlelight Adventure

Cartoon Time 1989

Olli & Lisa 3 The Candlelight Adventure is a gorgeous platform game published by Cartoon Time (AKA Codemaster) and the story follows Olli as he wakes up to find someone has taken his beloved car and dismantled it.

You get to choose between two cars to rebuild at the start, and then it's off in to the castle.

Grabbing a candle, because its dark or they haven't discovered electricity yet, he heads off around the spooky rooms to find all of the parts.

It's not that simple though. Before he can find and use a part, he has to find a magnifying glass and a spanner. Yes, it doesn't make much sense to me either! So it's a typical arcade adventure.

The platform layout is not typical though, many rooms cannot be navigated by jumping and you have to use the doors. These doors, as far as I can tell, take you to different places ,although it may be just me not understanding things, the instruction though make no reference to this.

You can only fall down a certain height so you can't just drop down to lower levels if they are a distance away.

If all this wasn't enough, your candle continually burns and you have to keep picking up new ones.

Other things you can collect include additional health and protection potions. You ned these due to the evil things that appear and can harm poor Olli if he collides with them.

Using the telephone will tell Olli which direction to go in, which is a nice touch, and you can also move some objects using controls. These help you not die by allowing you to drop to them, or kill ghosts, or be used as trampolines to get to higher platforms. This is a neat addition and adds an extra dimension to the gameplay.

The graphics are brilliant. Very well drawn and animated, with some great background details. There are some great comedic effects too and the whole game looks superb.

Sound is used well too and there are some nice effects throughout the game.

Playability is difficult to call.

I found myself all too often falling through the stairs or off of platforms.

The door navigation was a pain too and to climb down ladders, you don't press down as you would expect, you walk left and right slowly descending. This takes some getting used to!

I played the game for over an hour and never managed to find a single part of the car, so the game is either very hard, or I am useless, but remember my earlier comment about doors not being logical. These seem to take you sometimes to random places each time.

If arcade adventures are your thing, this is a great looking game that will give you a challenge. If you are a logical person however, stay clear – it will drive you bonkers.

Ocean 1986

If you are a fan of Rallying, then this game should not need any introductions, however there are a few twists that make it unique. As with the real thing, the objective is to drive through each stage in the shortest possible time, avoiding obstacles that slow you down. There are also pick-ups that give you super turbo power or allow you to teleport to any point. (just like the real thing then!)

There are different surfaces to content with, such as ice, where breaking is useless and skidding is expected. Each stage is laid out using flags, and you have to stay between them if you want to complete it. Sometimes the flags are quite close together, others very wide, allowing you to swerve to miss trees, and rocks, that cause your car to jump onto two wheels.

There are also rivers, that have to be crossed at slow speed, fuel pick up points and other things to keep an eye out for.

Revving your engine too much will cause it to overheat and slow you down so you have to be careful. You can use manual or automatic gears too, I always use automatic.

The graphics are really nice, although the landscape is a bit flat and boring. No texture, no dips or hills and no layered pattern like some games. There a few sparse twigs sticking up, but that's all. The car is well drawn though and animates well when you move or spin.

Sound is a bit dull, with just the engine sounds and a beep when you hit something. When you change gear, the sound does change to give a feeling that you are actually doing something.

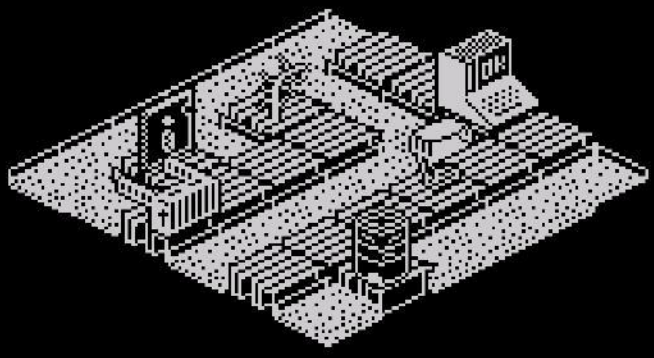
Control is good, giving you the feeling that you have at least some control of the vehicle.

It's a good game to play, especially if you like driving games, but because the stages are.. to be frank… boring… the appeal can soon wane..

S.O.S.

Mastertronic 1986

Mission 201 crashes on a faraway planet, and to signal for help, your only working droid is sent out to search for the missing radio. The terrain is shown in an ISO 3D view, and your little droid trundles about happily trying not to get destroyed.

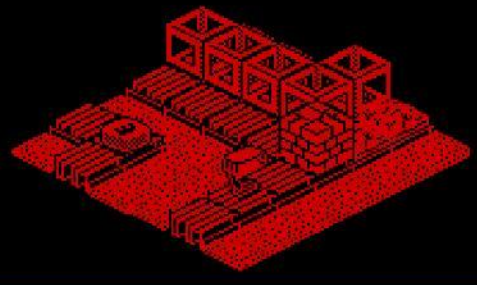


You can pick things up that will help such as computer discs, and these will let you get past large computers that block the way. You will also need to find something to produce light, because slowly, as you play, night comes and this means you can't see anything.

This is the biggest issue I have with the game and until you find a light, the game will be pretty short. Stood still in case you fall off the platforms means that the other nasty robots can just walk straight into you.

I enjoyed the game far more when I used a poke to give constant day and then the game became a puzzle solving expedition. You also have to watch your energy and collect energy packs when required.

The graphics are isometric, but move differently than the normal game of this style. The droid moves a set distance each key press making control easy and your path simple to plan. It needs to be too, as the only place he can move is the platforms. One wrong step and its curtains. This can be a problem when entering new screens because of the platform layout, you can sometimes fall straight into oblivion. When you die, you are taken back to the start too, which can be very annoying if you have made good progress.



Sound is limited to beeps when you turn, collect or interact with things. It would have been nice to have a click sound for each step the droid took as there are periods of silence when moving about.

Control is rotate left, right, jump and action. This works quite well, but the control is not designed for fast navigation, and I often leapt off the platforms by mistake as the key press did not register.

Overall, a nice idea but the day time limit, the off screen death and the sometimes sticky controls mean this game is a bit dull and frustrating.

CENTIPEDE

SHOOTOUT

Centipede was released into the arcades in 1980 by Atari and it took the standard vertical shooting game and gave it a new twist.

You are and archer, or a gnome, or an elf, depending on the version and hardware you play on, and have to shoot a centipede.

The centipede moves from the top of the screen to the bottom, moving horizontally as it goes. In its way are mushrooms that change its direction and that can be shot by the player to clear its path and provide more time to shoot it.

Other things to avoid are a spider that bounces across the screen, a flee that drops straight down leaving mushrooms in its wake and a scorpion.

The player does have limited movement vertically, but only a few lines up and down.

A simple idea and a great game… even better when played using the original arcade trackball.

So how do the Spectrum clones stand up?

Bug Buster - Crystal Computing 1983

Crystal make changes to the base game with their release, which is a bit of a shame, because the original was great.

Here we get weeds instead of mushrooms and single bugs instead of the multiple segmented centipedes. There is also a fly that replaces the spider of the arcade.

The pace of the game is great and provides a nice challenge. The graphics are small but move well and the sound is really nice.

A good game to start with then, just a pity it moves away from the arcade format.

Caterpilla - Spectrum Games 1983.

This game sticks to the arcade format with the centipede moving well and splitting when shot. The mushrooms are replaced by red blobs when shot and there is a spider, but it looks more like a fast food logo than a dangerous critter.

The action is fast but the firing rate is a bit slow in comparison making for a sometimes frustrating game. Sound is used well with some nice effects..

I sometimes got confused during play though, the screen flashed white but I don't know if it was because I had been killed or I had finished the level.

There is no flee or scorpion, just the spider, but despite this the game plays well.

Catterpillar - CDS 1983

This version includes all of the arcade features, which obviously makes it a high scorer, but things soon go wrong when you begin to play it.

The graphics, although looking nice, move slowly in character based jumps and the firing rate is way too slow for the speed of the game.

The sound is very basic and overall it was a game I felt I didn't want to go back to.

A real shame then, because it's the only one so far with the full feature set.

Centipede -DK'Tronics in 1982

This version is the one I bought, and it plays really well.

It has the splitting centipede, the mushrooms and the spider. It doesn't however, have the flee or scorpion, at least after three of four levels I managed to get to.

The graphics are small but move well and control is responsive. The sound is well used with some nice effects.

When the centipede reaches the bottom, it goes back to the top, unlike the arcade, which only jumps back up a few lines. This can sometimes mean you end up having to wait for the last segment to get into range before completing the level.

A fast paced game but it does not contain all the arcade elements.

Centi -Bug - DK'Tronics 1983

This is another version of the game released by DK'Tronics. I originally though it was the same game because it had the same inlay and loading screen, but it is written by a different author and is a completely separate game from the above release.

This is a good version of the classic with nice smooth graphics and responsive control and some excellent sound effects.

All elements of the arcade are present with the spider, flea and scorpion, and the action is fast paced and a real challenge.

The centipede acts like the arcade version when it reaches the bottom and there are colour changes in background as you progress through the levels (although I am not keen on this!)

A great game then and definitely a contender.

Centipede – Vectris Software 1983

Oh dear… this is a slow, very bad version of the game.

The white background is the first indicator something is wrong, and it gets worse. The graphics are very slow and jerky, the sound is awful and there is no vertical movement.

All is explained when you discover it is written in BASIC!

Centipedes - EMM Software 1983

This starts off looking promising. The game speed is selectable and works well. The graphics are nice, with some great explosions, but there is no sound until you die.

Control works well, although the keys are tricky to get used to.

There is a large spider but as far as I can see no flee or scorpion.

It's a pity about the sound because this is decent game to play and has good presentation.

Centrapods - Rabbit Software 1983

This version gives us most of the arcade elements and plays well.

The graphics are well drawn and move well and the spider is there, along with the flee. The sounds is a bit bland though, using basic beeps.

Vertical movement is done by holding left and right keys at the same time and the player moves up, releasing the keys and the player floats back down again, very awkward.

Not a bad version then, shame the vertical movement differs from the usual controls though.

Creepy Crawler - Mikro-Gen 1983

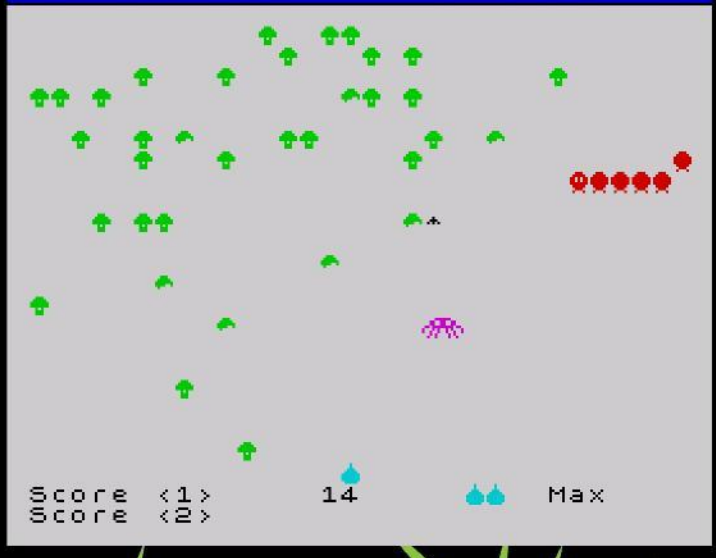
Ahh those wonderful Mikro-gen sounds!

This game has most of the arcade elements, but why the white background? Especially with a game that plays really well. And why the screen flash when you die too?

The screen does change colour each level, but it should really have stayed black. The graphics look nice and move well and the spider is there along with the flea.

Sounds consists of the familiar Mikro-gen sounds, and work well with the game and control is good with four directional movement.

The gameplay provides a decent challenge and this is not a bad version of the arcade game.



Cyber Rats - Silversoft 1982

This game breaks away from the arcade with multiple single targets instead of the segmented centipede.

The graphics are small, bland and move in character jumps. That said, playing the game provides a good challenge and it's the only game so far that actually changes the colour of the mushroom for each level and has mushrooms that need multiple shots to remove.

There is no spider, but the flee appears now and again! Sound is used well with some nice effects that suit the game well.

Game play is good and I enjoyed this game. The multiple segments makes for a different challenge and it's worth giving this a play.

Megapede - Softek 1983

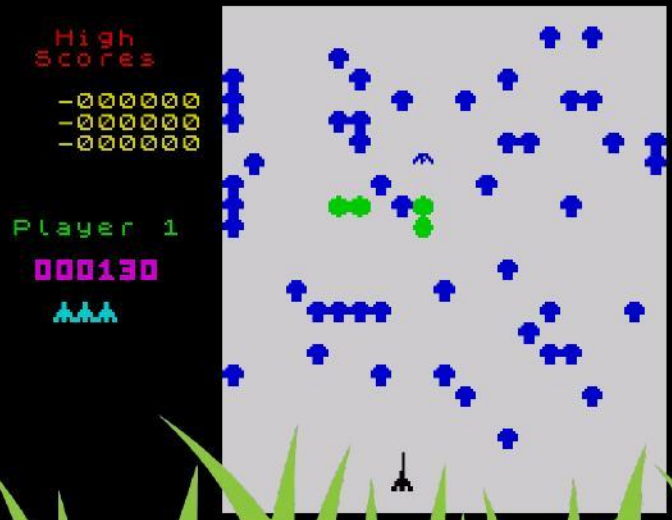
Most of the arcade elements are here, although some of them are swapped out. For example there is no scorpion, but something that looks like a ghost that moves across the screen dropping things on you.

The spider is present as is the multi-segmented centipede.

The graphics are clear but basic and move in characters based jumps, although this does not affect the game, at least in this version. The action is fast and you get a choice of game speeds.

Sound is used well although the standard beep is used for certain things. The mushrooms take more than one hit to get rid of, and over all this is not a bad game once you get used to the tricky control keys. Softek also released this game as Millipede. Different name, same game!

Millimon - Artic Computing 1983



The screen aspect has been changed by adding a panel on the left, which is not bad, but the main playing area is white which is terrible.

The bland graphics move in character based jumps and the control is a bit sluggish. Sound is not bad with some nice effects but not all elements of the arcade are here. No flee or scorpion.

A bit of a let down from Artic here and not as playable as some of the other games.

MillyPede - Add-On Electronics 1984

The game starts as soon as it finished loading and straight away the annoying loud beep begins to irritate.

Bland graphics move quite fast, but the firing rate does not match them, meaning the game is too tricky to get very far. Before you have had ten shots, the centipede is at the bottom of the screen. There is a spider hopping about and a scorpion, but I never saw the flea.

The spider is a real pain and often bumps straight into you, giving you no chance to move..

Not a bad game, but not the best on offer.

Mushroom Alley - Mogul Communications 1984

This game has nice presentation but moves away from the arcade format. There is the centipede moving down the screen but also boxes of TNT. Hitting these by accident will blow you up.

There is a snail that moves across the screen adding more mushrooms and the attract mode does show spiders and fleas, but I never got to see them.

The graphics are nice and move smoothly and control is definable and responsive. The mushrooms take more than one hit to remove and the game plays really well.

The main problem with the game is the firing rate. It's just too slow for the pace of the other elements. A bit of a shame really, as I quite likes this version. The centipede also goes back to the top of the screen instead of mimicking the arcade machine.

Mushroom Mania - Arcadia 1988

This is the newest of the Centipedes tested so you would think it would be technically the best. Things start with a beeper tune which doesn't raise hopes!

There is a centipede, spider but the flea is replaced by, I think, a fox head and there is also a Pacman!

The game tries hard but falls short. There are too many mushrooms ensuring the centipede always reaches the bottom of the screen and the Pacman is just annoying.

A fast and furious game then but the skill is replaced by just holding the fire button and avoiding things.

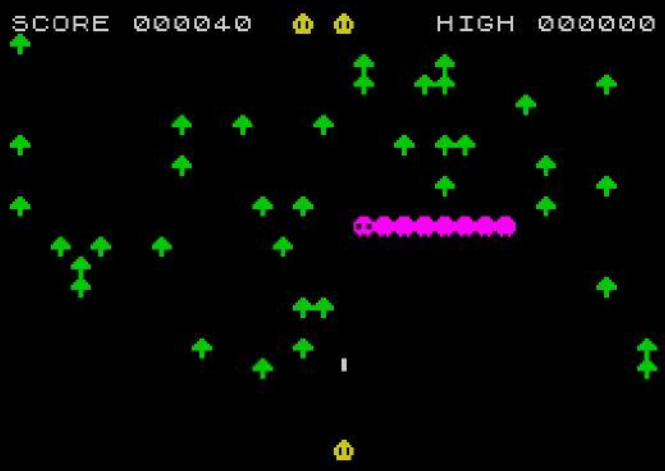
Night Stalker - Thor Computing 1984

Another promising looking game with the arcade elements all there, apart from the centipede going back to the top of the screen once it has reached the bottom.

Graphics are well drawn and move well enough, and you are given a difficulty setting, but even on easy, this game is challenging due to the amount of things happening at once.

On the first screen you encounter spiders, up to 3 fleas and a scorpion and of course the centipede itself. The action certainly hots up and the gameplay is enjoyable if a little difficult.

I like this version and it's certainly a contender.



Rapedes - Visions 1983

This looks familiar! It is in fact the same game as Centipedes from EMM Software but with added sound and more centipede segments. There is also a flea that drops down the screen. We now get a firing sound but sadly nothing else apart from the death sound.

Gameplay is OK, but the firing rate should have been much faster. The firing sound also plays based on the distance from you so it can get cut short or if the mushrooms are directly above you, not play at all, which makes for an odd experience.

Scorpion - Livewire Software 1983

Another familiar game! This is Caterpilla – the game by Spectrum games, or was this released first? We'll never know but they are certainly the same game. The font is different and so is the centipede segments. but everything else is the same. They are credited to different authors, but come on, really.

Squirmy Wormy - John Prince 1983

This game gets the playability spot on and I found myself wanting to keep trying to get further. The graphics are a bit bland but do the job and sound is very well used with plenty of different effects.

The spider is present along with the scorpion but not the flea.

The firing rate is juts right, matching the game speed to give a really nice experience. A great game then, and one to consider.

Spectipede - R&R 1983

The first thing I noticed was the multi coloured sprite on the intro screen, very nice! Onto the game then and we get all the arcade elements. The graphics are well drawn and move smoothly, and there is certainly a lot going on on screen.

Sound is used very well, with some nice effects. The centipede does not make a sound, but you are fooled into thinking it does because of the firing sound.

Control is good and this is certainly a challenging game. The mushrooms change colour each level too. There is nothing bad I can find with this game, apart from the difficulty, it's harder than the arcade, but does that make it a bad game?

Spectrapede - Protek 1983

This game is quite decent once you get into it. Most of the arcade elements are present, although I never saw the flea. I did see a space invader though, dropping bombs.

The graphics are a bit basic, but do the job and the sound is used well. The game does get faster as the centipede gets close to the bottom, and you just find yourself holding down the fire and trying to avoid the spider.

Not a bad game then.

Super Centipede - C-Tech 1983

C-Tech brought us the terrible Missile Command and the disgraceful Krazy Kong so how did they do with this?

The graphics are rubbish and the sound is straight from Krazy Kong. Control at least works and there is a bit of a game in here.

The spider is too aggressive, killing you most of the time and as expected, it's far from being a competent game, let alone a competent version of the arcade game.

And The Winner Is..

I can't remember all the games played, they all looked very similar so judging will be on two aspects. How close they were to the arcade and playability

If you want something close to the arcade, with all the elements then Spectipede from R&R is your game or Centi-Bug from DK'Tronics. As for playability, I really liked Squirmy Wormy.

Honourable mentions to Cyber Rats and Night Stalker

GALACTIC ABDUCTORS

Anirog Software 1983

This early shooter from Anirog has the usual features of such games, but for 1983, they have given us a bit more. The game has large graphics, good sound and moderate playability.

Unknown to myself until I played this game and did a bit of digging, it is based on an arcade game called Stratovox. I had never heard of this before so quickly grabbed the Mame ROMs for a quick blast.

The arcade game is a cross between Galaxian and Gorf where you try to defend humans on the right, from groups of invaders that swoop down in formation. If you don't shoot them all, they pick up one human and then carry them back across the top of the screen. You can still shoot them at this point to save the human.

The Spectrum version is basically the same game, but the movement patterns and formations are different. The aliens do not swoop in formations, instead they move around in a circular style and randomly one will pick up a human.

The aliens drop bombs too, which if they reach the ground, turn into mini invaders. If this happens you can fire sideways by pressing the movement key and the fire kay at the same time. This obviously means to fire upward, you have to be stationary. This is not present on the arcade.

A feature missing from the Spectrum version is speech. The arcade game included several phrases for various aspects of the game.

The graphics are large and are not really smooth, but the game does give the player a challenge. The added feature of firing sideways is good, and although different to the arcade machine, this game plays quite well.

Give this one a go if you like shooters, and also check out the arcade game.

Arcade version

Codemasters 1991

This is not your typical Dizzy game, and can be more likened to Tetris or Columns.

The game does have a story that involves a fantastic toy factory making excellent toys and to do this you have guide all of the parts into the right place.

The screen is split into four main columns, at the top of which are four funnels. At the bottom of the screen are a series of different shaped holes, and this section can be moved left or right.

From the funnels drop various shaped blocks, and you have to move the sliding area to match the blocks.

As time progresses, the funnels move lower down the screen, meaning you have less time to react and get the correct shaped hole in place to allow the block to fall through.

The game has several levels starting with just two block types, a cross and a circle. As the levels progress, more shapes are added and the slider changes to make things harder, having less holes per block shape.

Dizzy stand in the centre of the screen waving his arms about as you move the slider.

As the blocks appear, just like Tetris, you can drop them faster by hitting fire, and sometimes two blocks will appear together.

The graphics are colourful and well drawn and the sound is minimal with just effects for moving the slider and the blocks landing or crashing.

The concept is good, but without the graphics and character, it is just a run of the mill block matching game.

MIND YOUR LANGUAGE

George Beckett continues his voyage through Spectrum programming languages

Machine Code

In the previous article, I introduced machine-code programming, suggested some references to help you get started, and looked at some popular assemblers and development environments that were available then and now for the ZX Spectrum. However, while the principles of writing machine code are reasonably easy to understand (if a little primitive), the challenge for a new programmer is to build up experience of how to stitch Z80 instructions together to make useful programs; and getting your hands dirty is the best way to get this experience. In this article and the next, we will develop machine-code versions of the programs introduced in earlier articles, to get some hands-on experience.

Starting to learn machine code can be a slow and stamina-sapping process. Being outside of the protective environment of BASIC, it is quite easy to write a program that inexplicable crashes the computer, even though you have checked it carefully many times. There are lots of reasons why a machine-code program can cause a crash: often it is because of a bug in the program, though it is not uncommon for a perfectly correct program to crash due to other factors. Putting your program in the wrong bit of Spectrum memory; misunderstanding how a ROM routine works; or unexpected interactions with the hardware can all lead to difficult-to-diagnose problems. Building up the stamina to keep working at a problem, plus the intuition to know where to look outside of your program, are all part of becoming a machine-code programmer.

Developing programs in an emulator or on a PC makes things much less frustrating than was the case in the 1980's, when most amateur programmers would have been equipped with nothing more than a ZX Spectrum, a cassette recorder, and - if they were lucky - a reasonable assembler. The process of editing, testing, and debugging machine code was much slower when you had to reload the hex-loader/ assembler and source code from tape, every time you crashed the computer. In contrast, it takes a few moments to reboot your emulator and reload your environment. Furthermore, emulation of a disk system such as the ZX Microdrive allows you to easily transition between writing code, assembling and debugging like professional software developers would have done.

A good way to start out learning machine code is to write small routines as part of a larger BASIC program, to tackle the computationally intensive parts of the application. This approach, which is akin to prototyping, involves writing less actual assembly language and means you can

continue to take advantage of the high-level functionality that is included with Spectrum BASIC. The idea is to start off with an entirely BASIC version of a program and then, once that is working, re-write the critical routines in machine code to improve performance/ reduce the memory footprint.

To incorporate machine code into a BASIC program, you first need to make some space for the machine code in memory; since, when powered on, the Spectrum is set up with all memory assigned to the BASIC environment. Unlike many other programming languages, Z80 machine code is not usually position-independent, which means you have to decide up front where the code will be located in memory (for example, tell the assembler with the 'org' directive).

The most common place to put machine code is near the top of memory, between the BASIC environment and the user-defined graphics (which sit right at the top of memory). You do this using the BASIC command 'CLEAR address' which creates space between 'address' and the top of memory by shrinking the BASIC environment. For example, on a 48k Spectrum, 'CLEAR 57343' will give you a little less than 8 kilobytes of space for your machine code (from address 57,344 (0xe000 in hexadecimal) up to 65,367 - that is, the start of the user-defined graphics), and will leave around 33kB for BASIC (a little less if you have an Interface 1 connected). The address passed to the CLEAR command is often referred to as RAMTOP, and is the highest address that the BASIC monitor controls.

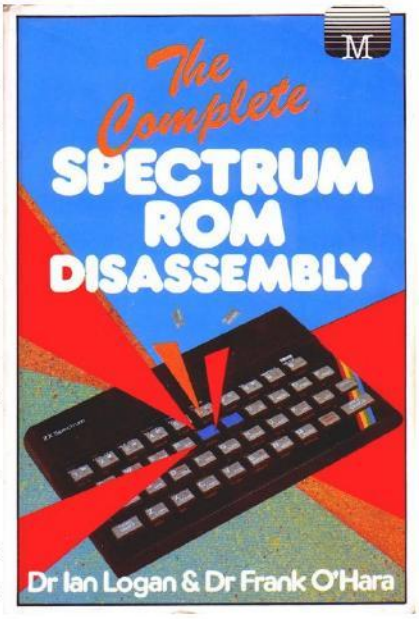
To run (or, more accurately, call) a machine code routine from BASIC, you use the function USR with a numerical argument - the address of the entry point to the routine. This function transfers control of the Spectrum to the machine-code routine until it returns control to BASIC via a RET statement.

The USR function is a fairly rudimentary way to call machine-code from BASIC: there is no built-in capabilities to pass arguments to the machine-code routine and very limited support for passing results back to BASIC - with the value of the BC register pair being returned as the result of the USR function.

To integrate machine-code routines into a BASIC program, you usually need to do better than this, and a common work-around to the limitations of USR is to POKE input data into a suitable memory location before calling the program and to PEEK results from memory after the routine ends (assuming one 16-bit number is not enough).

We can demonstrate these techniques using the BASIC program introduced previously that works out the day of the week corresponding to a date (that is, Zeller's Congruence). In reality, it is a relatively simple program and, even in ZX Spectrum BASIC, produces an answer near instantaneously, so it isn't obviously worthwhile to port it to machine code. However, if you needed to call the routine many times - for example, if you were writing a calendar program - then you might find it leads to a marked slow-down of the computer. In such a case, one option would be to rewrite the computational kernel in machine code.

However, despite its simplicity, Zeller's Congruence highlights a limitation of the Z80's functionality, in that the processor can only deal directly with the simplest of arithmetic operations - integer addition, subtraction, and some simple bit-manipulations. The multiplication, division, and modulus operations that are needed to implement Zeller's Congruence are not available as Z80 commands and thus have to be implemented as machine-code subroutines in their own right.



Thankfully, many people have encountered these limitations before so, rather than re-inventing the wheel, it is worthwhile to look at what is already available. A good source of useful routines is the ZX Spectrum's ROM and this is well-documented in Ian Logan and Frank O'Hara's book "The Complete Spectrum ROM Disassembly". For mathematics, it includes an extensive library of functions, called the floating-point calculator, which covers all of the mathematical operations available in Spectrum BASIC and more. We could use the floating-point calculator for our implementation of Zeller's algorithm. However, as the name suggests, it is designed

for floating-point numbers: as Zeller's algorithm involves only integer arithmetic, it will be more efficient to start from something else.

Thankfully there are a number of websites and books in which you can find the routines you need. One option is to use a book by Rodnay Zaks called 'Programming the Z80'. It is a large and technical book that tells you everything you want to know about the Z80 (and possibly a few thinks you don't). Zaks's book has long been out-of-print, though it is possible to pick up a second-hand copy from online book shops. Another option is to look at a website such as Z80 Heaven [http://z80-heaven.wikidot.com/], which has routines for a whole range of common functions, including arithmetic, data manipulation, peripheral I/O, and so on.

For my implementation of Zeller's Congruence, I've elected to use some subroutines from Zaks's book, including one called MPY88, which is reproduced in Figure 1. It multiplies two, 8-bit integers held in the E and C registers, respectively, and return the answer in the HL register pair.

Figure 1: Z80 machine code routine to multiple two numbers together

```
                ;; Perform eight-bit multiplication with multiplicand
                ;; in E and multiplier in C
                ;; On exit, result is in HL
MPY88:          ld d,0
                ld hl, 0            ; Will contain result
MULT:           srl c               ; Shift multiplier bit into carry
                jr nc, NOADDM       ; Test carry
                add hl, de          ; Add multiplicand to result
NOADDM:         sla e               ; Shift multiplicand left
                rl d                ; Save bit in D
                dec b               ; Decrement shift counter
                jr nz, MULT
                ret                 ; Result is in HL
```

The MPY88 routine is a very efficient implementation though it is a little tricky to follow. A thorough explanation is provided in Zaks's book; or, alternatively, you might find working through a simple example on paper helps. The routine deals with each (binary) digit of the multiplier (in the C register) in turn, adjusting the value of the multiplicand (which is first loaded into the DE register pair) by the right factor of two for each digit, and accumulating the result in the HL register pair.

To implement Zeller's Congruence, we also need a routine to perform a 16-bit division (including finding the remainder). Again, I have looked to Zaks's book for this, selecting a subroutine called DIV16.

With these arithmetic routines, we can create an implementation such as in Figure 2.

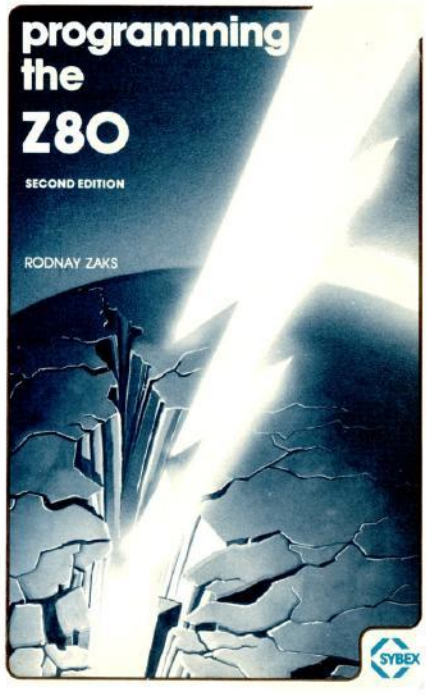
Note that the routines MPY88 and DIV16 have been excluded to save space (they are available in the complete listing on The Spectrum Show website).

This routine is designed to be called from BASIC, using an adapted version of the original program that we wrote in the first article (with changes highlighted in green):

```
10 REM Zeller's Congruence (m/code version)
20 REM Set up array with days of week
30 RESTORE 9110
40 DIM d$(7,9)
50 FOR n=1 TO 7
60 READ d$(n)
70 NEXT n
100 REM Request date to be resolved
110 INPUT "Day (1-31) "; d
120 INPUT "Month (1-12) "; m
130 INPUT "Year (4-digit) "; y
140 REM … and apply Zeller's Congruence
150 POKE 65280, d
160 POKE 65281, m
170 POKE 65282, y-256*INT (y/256)
180 POKE 65283, INT (y/256)
190 PRINT "Day is "; d$((USR 65284) + 1)
200 REM Check if another date to be resolved
210 PRINT #1; "Want another day? (y/n) ";
220 LET i$=INKEY$
230 IF i$="" THEN GO TO 220
240 PRINT #1; i$
250 PAUSE 30
260 IF i$="y" OR i$="Y" THEN CLS : GO TO 110
290 STOP
9100 REM Days of the week
9110 DATA
"Saturday","Sunday","Monday","Tuesday","Wednesday"
,"Thursday","Friday"
```

Fig.2

```
;; Machine code implementation of Zeller's Congruence

       org 0xff00          ; Addr = 65,280 decimal

DAY:   db 23               ; Place-holder for input date
MONTH: db 4                ; e.g. populated with BASIC
                             POKE statements
YEAR:  dw 1982

ZELLER:
       ;; Check if month needs to be modified
       ld bc, (YEAR)
       ld a, (MONTH)
       cp 3                ; If m<3 then modify
       jr nc, NOMOD
       add a, 12           ; Add 12 to month
       dec bc              ; and reduce year to balance
       ld (MONTH), a       ; Save month for later

NOMOD: ld de, 100          ; Divisor for year

       call DIV16
       ;; On exit BC contains the century (J) and HL
          contains the last two digits of the year (K)
       push hl                     ; Save K

       ;; Compute 21*J
       ld e,21
       call MPY88          ; Answer in HL

       ;; Compute 21*J/4, using two right-shifts of HL
       srl h
       rr l
       srl h
       rr l

       ex (sp),hl          ; Swap 21*J/4 with K

       ;; Compute 5*K
       ld e,l
       ld c, 5
       call MPY88          ; Answer in HL

       ;; Compute 5*K/4, using two right-shifts of HL
       srl h
       rr l
       srl h
       rr l

       ;; Compute 21*J/4 + 5*K/4
       pop bc              ; Retrieve 21*J/4 from stack

       add hl, bc

       push hl             ; Save it

       ;; Compute 13*(m+1)
       ld a,(MONTH)
       inc a
       ld e,a
       ld c,13
       call MPY88          ; Answer in HL

       ;; Compute 13*(m+1)/5
       ld b,h
       ld c,l
       ld de,5

       call DIV16          ; Answer in BC

       ;; Compute 13*(m+1)/5 + 21*J/4 + 5*K/4
       pop hl              ; Retrieve (21*J/4 + 5*K/4) from
                             stack

       add hl, bc

       ;; Compute d + 13*(m+1)/5 + 21*J/4 + 5*K/4
       ld a, (DAY)
       ld c, a
       ld b, 0

       add hl, bc

       ;; Compute (d + 13*(m+1)/5 + 21*J/4 + 5*K/4)%7
       ld b, h
       ld c, l
       ld de,7

       call DIV16

       ;; Transfer answer to BC before return to BASIC
       ld b, h
       ld c, l

       ret
```



Notice that we set the input data using POKE commands and that the entry point (the argument to the USR function) corresponds to the address of the command 'ld bc, (YEAR)' in the machine code. Also notice that to pass the answer back to BASIC, we load it into the BC register pair before return.

A better if somewhat more involved way, which is explained in Toni Baker's book "Mastering Machine Code on your ZX Spectrum", is to create a user-defined function, with input arguments, and then read in the argument list from the BASIC variable space at the beginning of your machine-code routine. Specifically, instead of poking values into the machine code program, as above, we specify them as arguments to a user-defined function call - for example:

```
DEF FN d(date, month, year) = USR 65284
LET day = FN d(day, month, year)
```

- and read the date values, from the BASIC variable space, at the beginning of the machine code routine. To properly know how to do this, you need to understand how variables are stored in the BASIC environment. Suffice to say that, if we assume that the three arguments are (16-bit) integers, then the following assembly language instructions prepended to the routine will set everything up as required.

See figure 3

To call the revised version of Zeller's Congruence from memory, the following lines need to be changed/ added:

```
…
130 INPUT "Year (4-digit) "; y
140 REM … and apply Zeller's Congruence
150 PRINT "Day is "; d$(FN d(d, m, y) + 1)
200 REM Check if another date to be resolved
210 PRINT #1; "Want another day? (y/n) ";
…
990 DEF FN d(day, month, year) = USR 65284
```

Figure 3:

```
;; Machine code implementation of Zeller's Congruence


DEFADD:         equ 0x5c0b      ; Address of arguments for user
                                defined function
                org 0xff00      ; Addr = 65,280 decimal
ZELLER:
                ld hl, (DEFADD); Point to start of argument list
                                for FN
                inc hl          ; Advance to day, assuming integer
                inc hl          ; argument
                inc hl
                inc hl
                ld a ,(hl)
                ld (DAY), a     ; Save for later


                ld bc, 0x0009
                add hl,bc       ; Advance to month


                ld a, (hl)
                ld (MONTH),a    ; Save for later


                add hl,bc       ; Advance to year


                ld c, (hl)      ; Load YEAR into BC
                inc hl
                ld b, (hl)


                ;; Check if month needs to be modified
                cp 3            ; If m<3 then modify
                jr nc, NOMOD
                add a, 12       ; Add 12 to month
                dec bc          ; and reduce year to balance
                ld (MONTH), a   ; Save for later


… and so on
```

Note:
You may spot that I am using a different notation for hexadecimal numbers to what I used in the previous article. Modern assemblers commonly accept the 0xe000 style of hexadecimal numbers instead of/ in addition to the #e000 form used by the Zeus and Laser Genius assemblers

Given that the BASIC version of Zeller's Congruence was quick to run, it's difficult to see if the machine-code version is any faster. However, by looping over the calculation 1,000 times, I've been able to crudely measure the speedup from BASIC to machine code as four times (the BASIC version takes around 0.4 seconds to calculate a typical date, whereas the machine-code version takes around 0.1 seconds). Also, while the listing is much longer to print, the machine code version occupies 159 bytes versus 264 bytes for the (stripped-down) BASIC version.

The approach I have taken with Zeller's Congruence - that is, starting with a BASIC version of the program and then porting the computationally intensive elements to machine code - is a common one, which makes writing machine-code programs more manageable. It would have taken much longer to write the whole program - including the part that reads in the date from the user and the part that prints the calculated day - with little return on the investment. A good balance is to exploit the flexibility and functionality of BASIC when possible and then resort to machine code only when BASIC is not up to the job - is too slow or occupies too much memory.

In the next article, we will revisit the Rabbit Run game that was introduced earlier in the series and which is affected by sluggish performance with Spectrum BASIC. Following the same approach as above, we will port the computational bottlenecks to machine code in an attempt to eliminate the timing issues seen when the fox appears on-screen.

More from George next issue.

Brian Clough's Football Fortunes

CDS Software in 1987

This is a strange game, because it was not just another football management game, but a board game as well. Inside the box you get a detailed set of instructions, a large cardboard playing area set out like a football pitch, a huge wad of fake cash, some playing counters, the tape and a large collection of player cards.

You can tell which era the game comes from by the names on the cards; John Barnes, Nigel Clough, Andy Gray etc.

To start with each player, and there can be up to 4, is allocated £200,000. You then start the game and change the team names if you want, and give yourself a team. The computer then tells you what cards to pick from the pack based on the numbers shown on them. The numbers indicate the player points.

When added together they will give you your attack and defence a score, so my team for example, had a defence score of 15 and an attack score of 19.

I also had two utility players that I could swap out to improve these scores, so I swapped out a defensive player to increase my defence score to 16.

The pack is then shuffled and placed on the board. Once you have your starting team and your cash, it's time to play.

Your roll the die, or rather the computer does, you then move your counter around the board in the normal fashion, and see what you land on. Landing on managers luck will prompt you to select this on the computer, which will randomly provide good or bad luck.

Now the turn of the other player (there has to be two human players) goes through the same routine. With the first round complete, you can now play your first game.

To do this you enter the attack and defensive values based on your players score and wait for the results to come in

If you win you get half of the game takings and so build up your cash. Then its back to the board again, This process is repeated over and over again. Board game move, play game, board game move, play game etc using the Spectrum as the source of random choices.

Sometimes you get cash, sometimes you loose cash, sometimes it's good news and other not so.

If your team is doing well you may get entered into a cup match and here you just sit and count your cash while the result roll in.

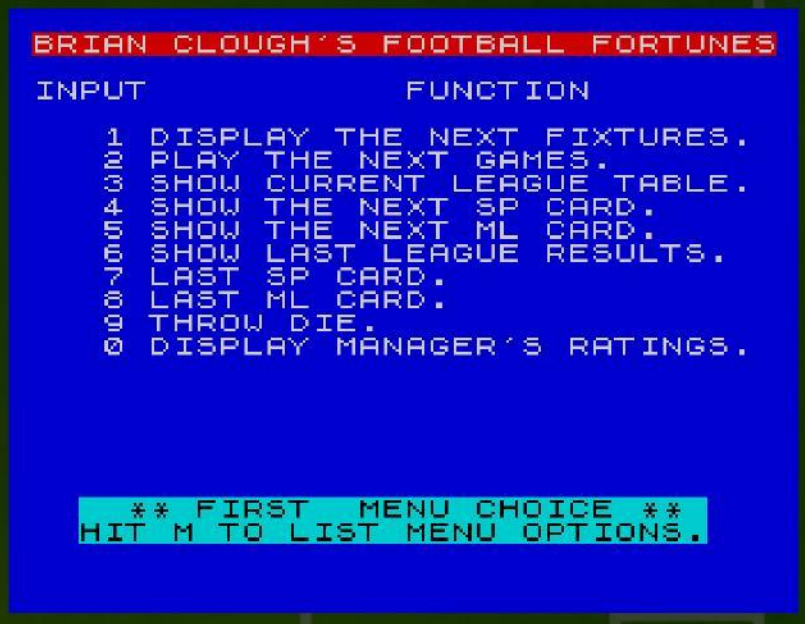
A lot of the early game I spent looking up the meanings of the places I had landed on, but once you get to know them, this becomes less of an issue.

If one player lands on a Crisis square they have to pay out £50,000 as a fine and lose their best player. However you can get some back if you land on the sponsorship square, that's an instant £30,000 from the bank.

If you land on the auction square, the top card of the pack is turned over to reveal which player you can bid against and all players can place bids. This gives you a chance to improve your team if the player has a higher score then you current set.

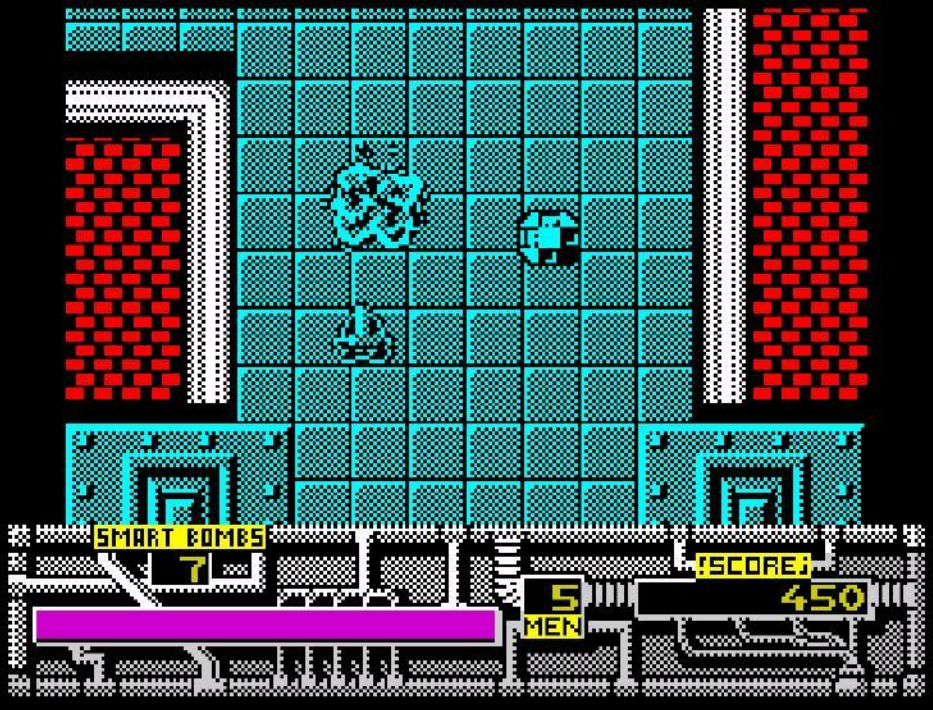
And then it's back to the same routine until the season ends or you are sacked.

I am not a fan of football games, but I like the odd management game. This merging of the two I guess would be better if played after a few beers by people who follow football. For me, it was interesting to see the idea working and how the Spectrum was used to assist in playing, but it wasn't a game I felt I would go back to.



MARAUDER

Hewson Consultants 1988



An evil civilisation from eons ago stole valuable jewels from their defeated enemies and hoarded them on the planet Mergatron.

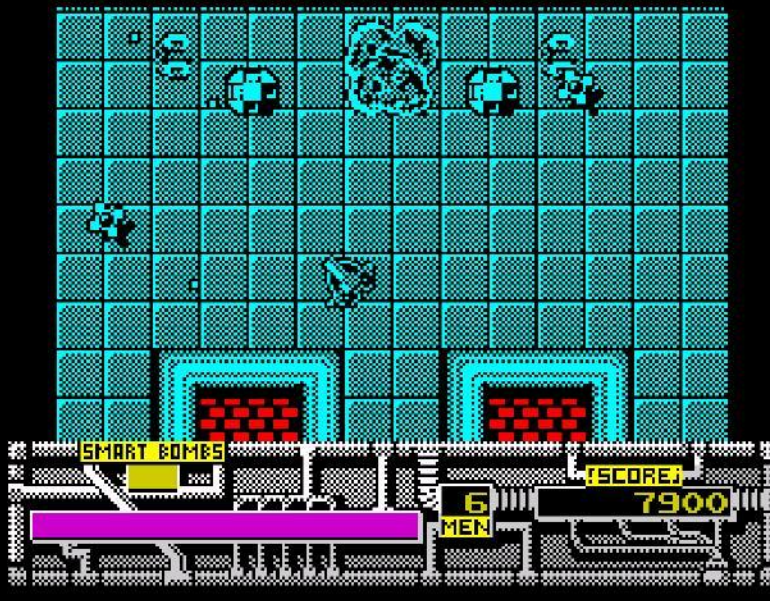
As time passed they faded away leaving old defence systems to protect their stash.

You play Captain C. T. Cobra on a mission to reclaim these jewels in your Marauder Battle Car.

The game starts with some great music before we get into the shooting action, yes it's a shoot-em-up, or rather a general shooter because you can fire in other directions.

The screen scroll vertically, but you cannot move back down, so it's forward all the way.

The first thing I did was to shoot the glowing blobs, however you have to be very careful because depending on the colour at the time they are destroyed will give or takes away various things such as lives, smart bombs and shields. They can also reverse your controls and jam your gun, which is a real pain and unless you are a good pilot, will usually end in your death.



As you progress, there are flying alien craft that shoot at you and ground based cannons that fire either direct shots or homing missiles. From the very start the game is hard.

You can take two approaches. Fly slowly and take out the enemy as they approach, being careful not to move too quickly into areas with cannons or go in guns blazing moving as fast as you can. I tried both methods and completely failed to make much progress.

The enemies do appear in the same places, so you can plan

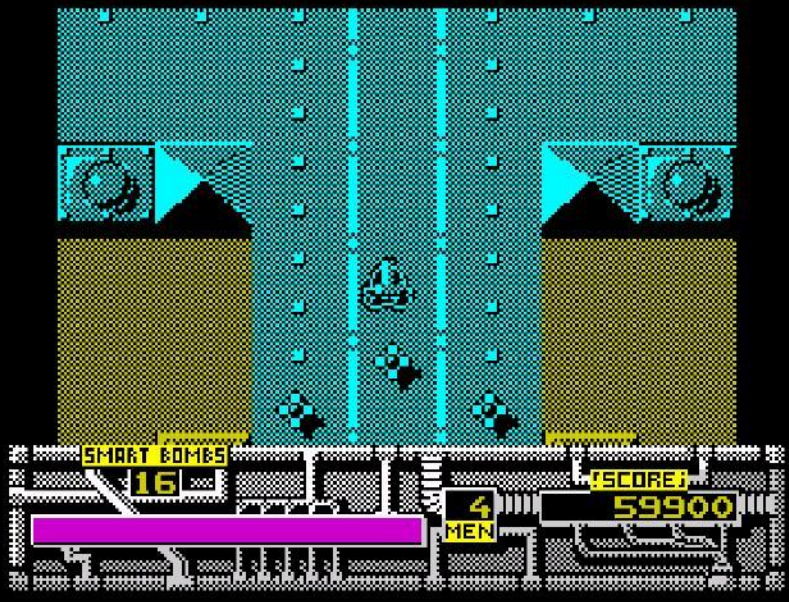
your route but even then one misfired shot can jam your guns or take away a life.

I tried for ages to make progress, each time being killed far too early in the game to make it actually a good playing experience. At times, for me, it was bordering on frustration.

The graphics are well drawn and move smoothly, but the main sprite does not look like a battlecar. The backgrounds too are detailed with some nice parallax effects. Colour is used well to avoid colour clash although the game playing area is monochrome.

Sound is limited to firing, explosions and pickups, which works well.

Despite playing for over 30 minutes, I still did not complete the first level so to see the others I had to watch the RZX recording.



The second level is a desert planet and there are different aliens and land based cannons to destroy, and the gameplay continues to be challenging.

The action fluctuates from careful manoeuvring to all out blasting and knowledge of the game map is essential.

Control is tight, and there is no lag in movement or firing, which is just as well really.

I think an easier first level would have been ideal, introducing the player to the different elements of the game gradually rather than throwing everything at them to start with.

A good shooter, but one for expert players only.

BANGING THE DRUMS

The Cheetah Specdrum Reviewed

The Cheetah Specdrum was one of the add-ons that sounded cool (in more ways than one), but unless you were a budding musician, or interested in music, it held little value.

The device costs an amazing £29.95 when new, which although sounds a lot for a Spectrum add-on, when compared to professional drum machines, which cost over £200, this really was a bargain, considering the lim-drum like sounds it produced.

In the box there is the unit itself which is only slightly bigger than a joystick adaptor. Coming out of it is an audio lead to connect to some form of amplification ending in a phono plug. There is a small, but packed manual and of course the software.

The tape comes with a standard set of drum sounds to use, but Cheetah also released a further three tapes containing alternative kits.

Once everything is plugged in and the software is loaded you get a very complex looking screen. This is a serious piece of kit, bordering on professional, at least back in 1985.

The software allows you store 16 songs, each containing up to 64 different patterns using 8 samples or drum kit sounds, for example snare drum, hand claps, cowbell etc.

On the left are the 16 slots, waiting to be edited. On the right are various options to select and play, change the tempo and give your masterpiece a name.

Choosing song 1 prompts for number of divisions and this sets out how many places there are that can have a sound applied.

Pressing P will now let you add sounds into your new empty song. You can do this by moving the cursor to the desired slot and selecting which sound you want to insert. You can also do this in real-time, which I would stay away from, at least until you are familiar with the software.

It takes a bit of time to get used to how the editor works, especially the delete option, after which you have to then re-insert an empty slot, otherwise the whole length is wrong.

It doesn't take long though the get a decent pattern.

You can then save it to one of the 64 slots you have free. Once you have some patterns ready, you can then use them to build your song.

In the song editor, using L and ENTER you can move across your song and insert patterns in any order. The whole song can then be played back, edited and saved.

You can set the pattern you want and how many times to loop it. This way you can quickly build up a long set of patterns to form your song. The end result is very impressive.

Let's take a quick look at the other drum kits available then.

The Latin kit gives us the obvious, a Latin drum sounds including the obligatory whistle.

The Afro Kit provides another set of log thumbs and tribal drum sounds.

And finally the Electro kit gives us a blast of 80's nostalgia with zaps, claps and electro tom toms.

The Cheetah Specdrum is an exceptional piece of kit for its time, with ends results not too far away from things heard on Top of The Pops. Throw in some synth sounds and a sequencer and it shows this add-on can mix it with the best.

A great addon then for anyone interested in music and of course, the Spectrum.

REPLAY MANCHESTER

Event Report From Manchester

Replay Expo once again comes to Manchester, and a fine event it was, with masses of arcade cabs, pinball machines and retro consoles.

It was that time of year again, when Manchester hosts Replay Expo, and I get a chance to catch up with friends, play some classic arcade games, shop around for bargains and generally a have great day out.

This years event had masses of arcade cabs, as they always do, and I grabbed plenty of games on such classics as Tempest, Joust, Pleiads, Star Wars, Galaxian, Scramble and Juno First, amongst many others. It was easy to get a game too, the only machines that had a queue were the sit down cabs like Outrun and Afterburner.

The pinball tables were out in force again, probably more than previous years, and although many people were waiting for a game, I was happy to pass and just watch.

Again, there was a lot of consoles out, all ready to play, with the usual Megadrives, NES, SNES, Amigas, Ataris, Playstations and Xboxes, and a host of other offerings, including a Commodore Pet.

The noise level was loud, but in the arcade area they were pumping out 80's classics, which made for a great experience.

There was quite a few break out talks taking place too, in particular Speccy Sunday with Jim Bagley, Andrew Hewson, Andy Remic, Rich Stevenson, John Hare and Steve Turner.

The Spectrum showing was better than previous years, with four machines, at least the ones I could see, but still less than other similar computers.

There were a few Youtube people there too, the Retro Hour guys of course, and I had a quick chat to Kim Justice at the Speccy Sunday event.

I bought some old and interesting magazines and a few Speccy games for the show and for me, this years was much better than previous ones. I really enjoyed it, and can't wait for next years events to start.

Pentacorn Quest

José Ignacio Rodríguez - 2015

Your quest is to find the 5 golden acorns, and once collected use them to enter the ancestral doorway.

Along the way you will have to collect and use a variety of different objects and also use special pads that when operated, will change the scenery and give you access to other areas. Bridges will appear, platforms will vanish, and you have to work out what each one does to let you progress.

The game uses the Churrera game engine, so anyone familiar with the mechanics of the games produced using this engine, will be at home with the controls and jumping mechanism.

Moving around is hampered by the other evil creatures that inhabit this world, but they follow set paths so you just have to time your jumps.

You will find exits blocked or platforms unreachable, and so the pads are used to make these possible. The pads, which are magenta blocks, can be triggered by standing on them, and sometimes you have to manually trigger them using the action key.

once mastered, you will be leaping about all over the place.

A great game then, a nice challenge and well worth having a go at.

Highly recommended.

This adds a puzzle element to the game, which means it is not just a simple platformer. You will need to use your brain.

The puzzles are mostly logical, you find a 16k spectrum that needs more memory and somewhere in the game map you will find 48k. There is one puzzle that involves growing a plant to reach a higher level that you do not know is there, or at least I didn't until I watched the RZX playback. I did not see any hint that this could be done, so I expect a few players to be a bit stuck at this point.

There is a pick axe to collect, and this obviously lets you dig (remove) certain blocks to give you access to other screens.

The graphics are great, with colourful and well-drawn backgrounds and nicely animated sprites. Things move smoothly and the controls are very responsive.

The music plays throughout and really adds to the game, and the controls are typical for Churrera games, easy to use once you conquer the jumping. This is the key to this game, learning how the jump works, and

Reviewing the games that came with the Vega console

..but without instructions!

GOLD MINE

Here we have a very early game from DK'Tronics, that to be honest would not look out of place as a magazine type-in.

You control a man who has a set amount of energy, and he has to dig underground to locate gold. Each move is one character square and the round objects are things to dig out - so I found out by trial and error. I wasted the first few games trying to avoid them!

Because you have limited energy, you have to get what you can and allow enough to get back to the surface to hand in your gold and also to refill your energy.

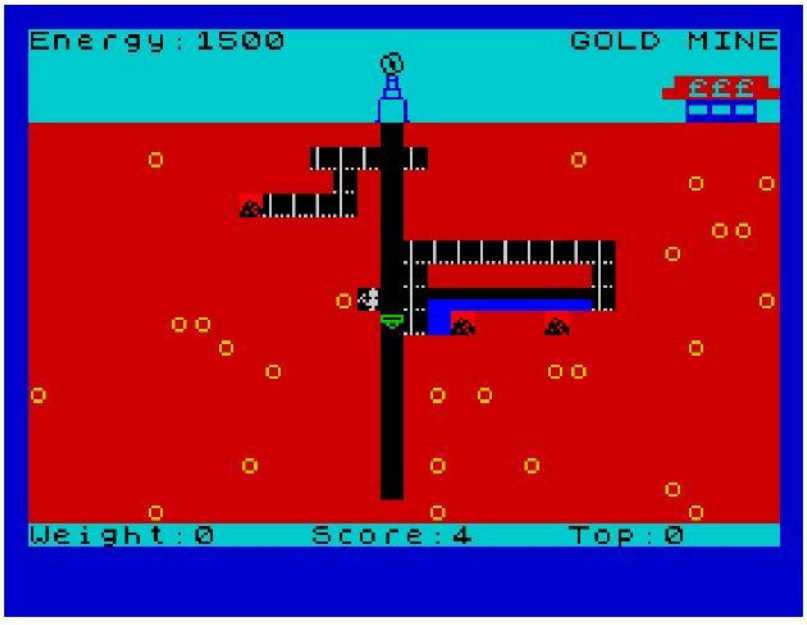
The gold is randomly placed each game, and as previously mentioned, this looks and feels like a BASIC game.

The graphics are UDG's, the sound is simple beeps and everything just looks very basic and simple.

It does play fine on the Vega, as the controls are just up, down, left and right, but it does not show off the Spectrum in any way.

The gold can also hide dangers such as hard rock, that stops you moving or worse, flooding which kills you!

A typical early game that may be good for a few plays, but like most games on the Vega, it needs some instructions.



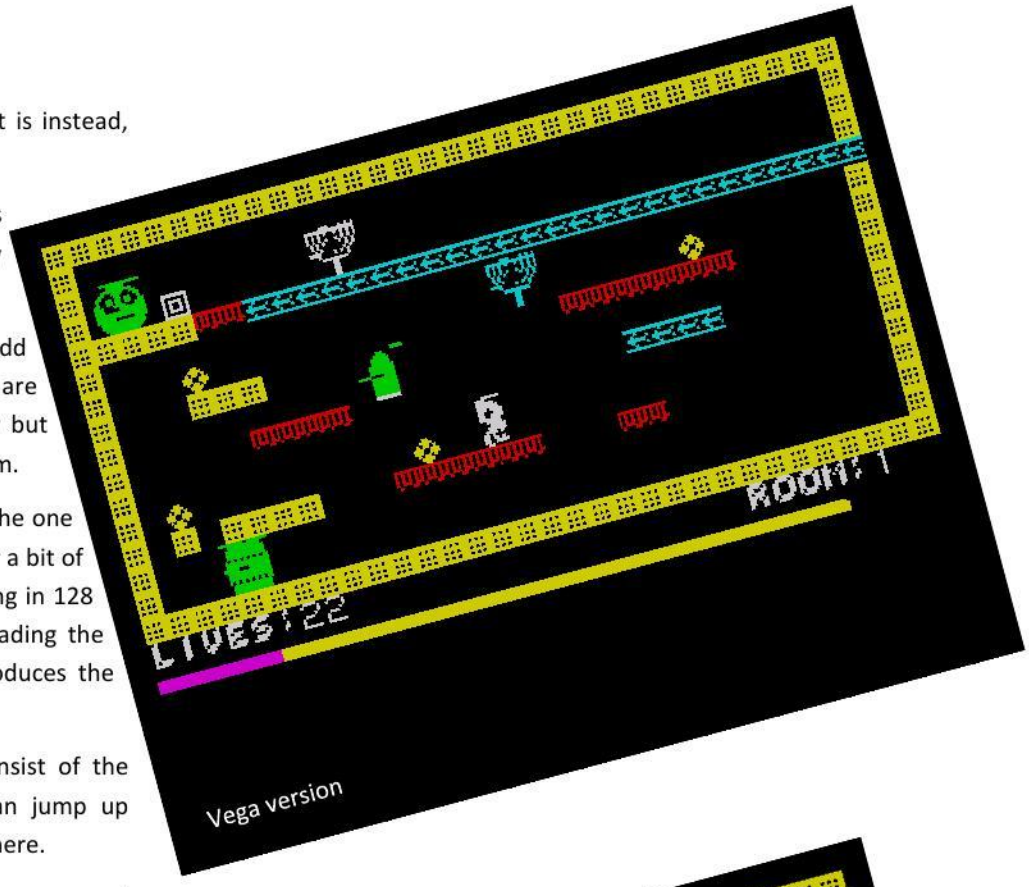
MAGLAXIANS

No, this is not another Galaxians clone, it is instead, another Manic Miner clone!

The playing area is smaller but the idea is the same, collect all items before finally reaching the portal to the next level.

The graphics, although large, are rather odd in shape and I'm not fully sure what they are supposed to be. They do move smoothly but there is quite a lot of flicker in most of them.

The version on WOS looks different than the one on the Vega, which is a bit intriguing! After a bit of testing it seems the Vega version is running in 128 mode, so the graphics are corrupted. Loading the game into an emulator in 48k mode produces the correct graphics!



Vega version

Back to the game and the platforms consist of the usual things, solid walls, ladders you can jump up through and conveyor belts, nothing new here.

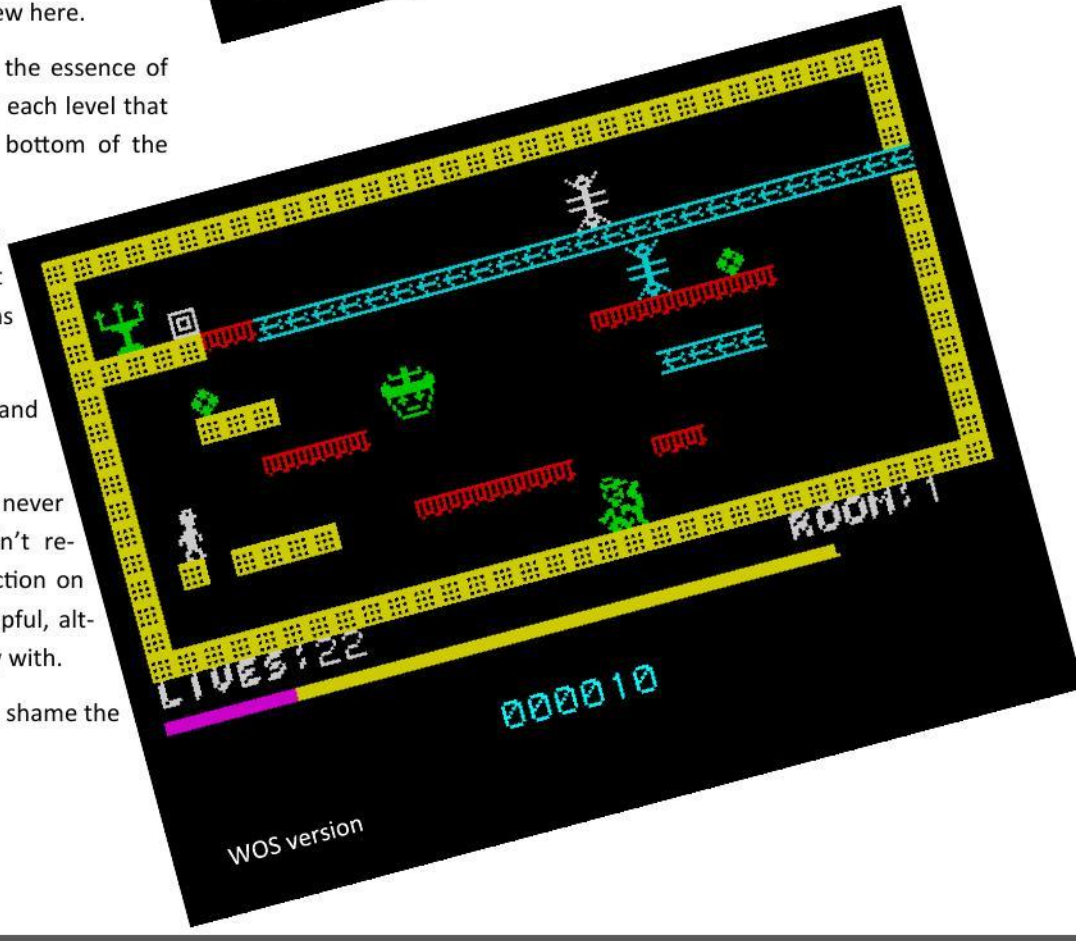
Working out how to get each item is the essence of this game, and there is a time limit for each level that can be seen slowly depleting at the bottom of the screen.

You get plenty of lives, which is a good thing, as it does take a while to get used to the jump and which platforms do what.

Sound is good, with some nice effects and thankfully no continuous music.

Control is solid with no delay, and you never feel annoyed that the character didn't respond in time. There is also no restriction on how far you can fall, which is also helpful, although you do get plenty of lives to play with.

This is an average game then, it's just a shame the graphics are corrupt on the Vega!



WOS version

WARNING: MAY CONTAIN SPOILERS

GRUMPY OGRE'S Adventure Page

Here we are again then, back in the land of goblins and orcs. Well it is if you are playing a fantasy adventure anyway!

Thinking about it, there must be an adventure game for every plausible era, situation and fictional location.

There are adventures about cavemen, dinosaurs, mountains, Incas, Egypt, under water, caves, castles, towns, crypts, holidays, planets, aliens bases, spaceships and more.

It is amazing that the power of the mind can put the player into any situation and a game of puzzle solving will ensue.

This month I returned to a game I purchased simply because of the graphics shown in the advert; Jewels Of Babylon.

I recall being frustrated with this game when I first got it, and sure enough that feeling takes about three seconds to return once the game started.

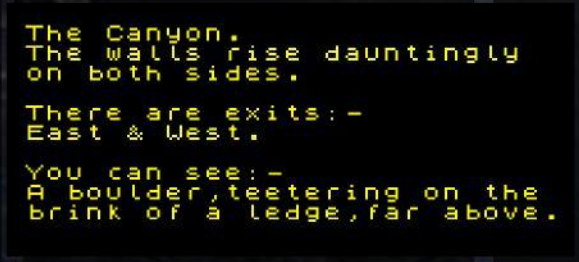
The beautiful graphics soon give way to a frenzy of randomly typed words and phrases just to get of the ship. You can see a ladder and a boat, but most of the commonly used phrases wouldn't work.

GO BOAT, CLIMB LADDER, DOWN, USE LADDER, CLIMB LADDER, CLIMB INTO BOAT all failed, and the one that worked was CLIMB DOWN LADDER!!

At this point the game show's us why the graphics are so nice; it's because the text descriptions are very spares, obviously most of the memory is taken up by the images.

As the game moves on, there are plenty of items to collect and luckily not a lot of silly guess the phrase competitions. Well, OK, yes there is...

One location sees a giant boulder, teetering on the edge of a cliff, ready to fall down. A few locations away and a giant crab starts chasing you. Leading the crab to this boulder location is easy, but now what?



Pushing or pulling does not work, luckily the HELP commands gives us a little hint. With crab crushed, the journey continued, and then the worst thing happened, I found the maze.

I hate mazes, there is not good reason for them, other than to extend the game time. The swamp maze had no hints about how to get out and deep inside can be found a crocodile.

Randomly entering directions will eventually get you out, but why?

The game contains slightly unlogical puzzles, for example when confronted by a lion about to pounce, what should you do? Of course, you give it a fish! We all know lions love a nice bit of haddock!

And how about dealing with that crocodile. What item in our inventory could we use? Of course, the keg! It's obvious when you think about it!

And this is where adventure games put people off. A good, well thought out puzzle should have the player slapping their forehead and muttering "Bloody hell, it's obvious - how did I not work that out!" and not "Why the bloody hell would I give a lion a fish?"

If on your travels you come

across a dark cave that cannot be entered, and you have a branch, and nearby is a village with a fire, you automatically think.. Branch + fire = torch = get into cave. You certainly don't think, where can I find a fish!

Just when I was making progress, the game threw up yet another maze, this time the Jungle. One maze is bad enough, but two is unthinkable. (the game has more mazes too!) I soon got bored of stabbing random directions and gave up.

Herein lies the lesson for today, good graphics maketh not a good game.

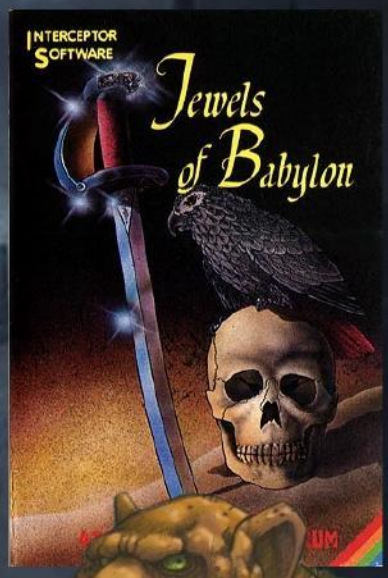
Because I could not get far without my blood pressure going beyond the normal levels for an aged ogre, I opted to watch the RZX playback, just so I could see those wonderful images I missed when I bought the game in 1985.

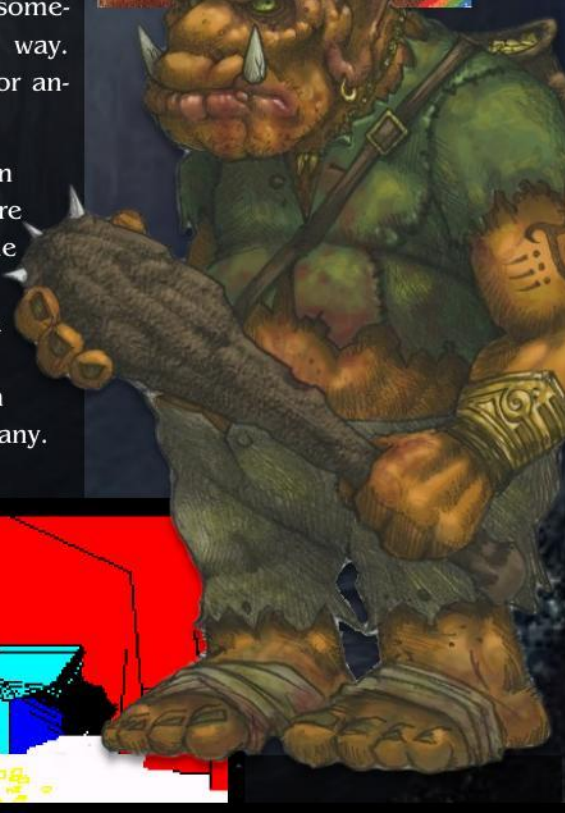
There are some really well drawn location images in-between the sparse text and odd puzzles. There is no doubt the game is challenging, but for the wrong reasons.

As the game progresses the images get less detailed and less attractive. Compare the very first few locations with the treasure chamber, and you can see a big difference.

Graphics in adventure games are always a mixed bag. Sometimes they enhance the game, sometimes they give clues and sometimes they just get in the way. That discussion though, is for another time.

Illogical puzzles though, often called Moon Logic puzzles, are game destroyers. They are the difference between players forging ahead and enjoying a game, and players giving up and making them think again about buying from the company.





CASSETTE 50

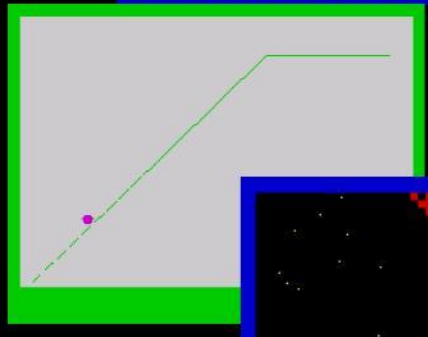
GAME BY GAME

42. Manhattan Blitz

Oh my… a blitz game. We all know these, we have all played them and there are hundreds of them in magazines to type in your self. There is nothing special about this version, it's just like every other BASIC version.

43. Fishing

This is such a crap game! First you are given a set amount of money and have to chose rod, reel, bait, hooks etc.. Then it tells you that you fell over and lost a random number of items (often all of them). Then you cast your line and wait… and wait… and the game crashes… most of the time!!! Then you have to start all over again!!



44. Mystical Diamonds

Here we have a series of small games rolled into one. First a minefield navigated using the cursor keys, then a hill where you have to jump over barrels, then a moat.. And then I got bored..

45. Galaxy Defence

This game looks better than it is. Two aliens slowly move down the screen and you move your missile base left and right to line them up. You can then fire, by which time they have probably moved out of the way due to the keyboard delay.

46. Cypher

Anyone played Mastermind as a kid? Well here is the Speccy version. You can choose how many pegs to guess, how many colours to use and if you want a timer or not. Then you try to guess the pegs the computer has. You are told if your guess has the right place and colour, the right colour wrong place or completely wrong. Using this, you can then modify you guess until you hopefully get it right.

47. Jetmobile

Here you guide a yellow block around the screen, trying not to hit the red walls. The red walls grow after a set period of time and the yellow block constantly moves. You cannot change the direction fully, instead your key presses affect the drift. A bit dull and pointless.

48. Barrel Jump

Your little man runs along the ground towards some barrels, that increase each time. You press a key to make him jump. The movement is very odd, so this game is down to luck rather than skill.

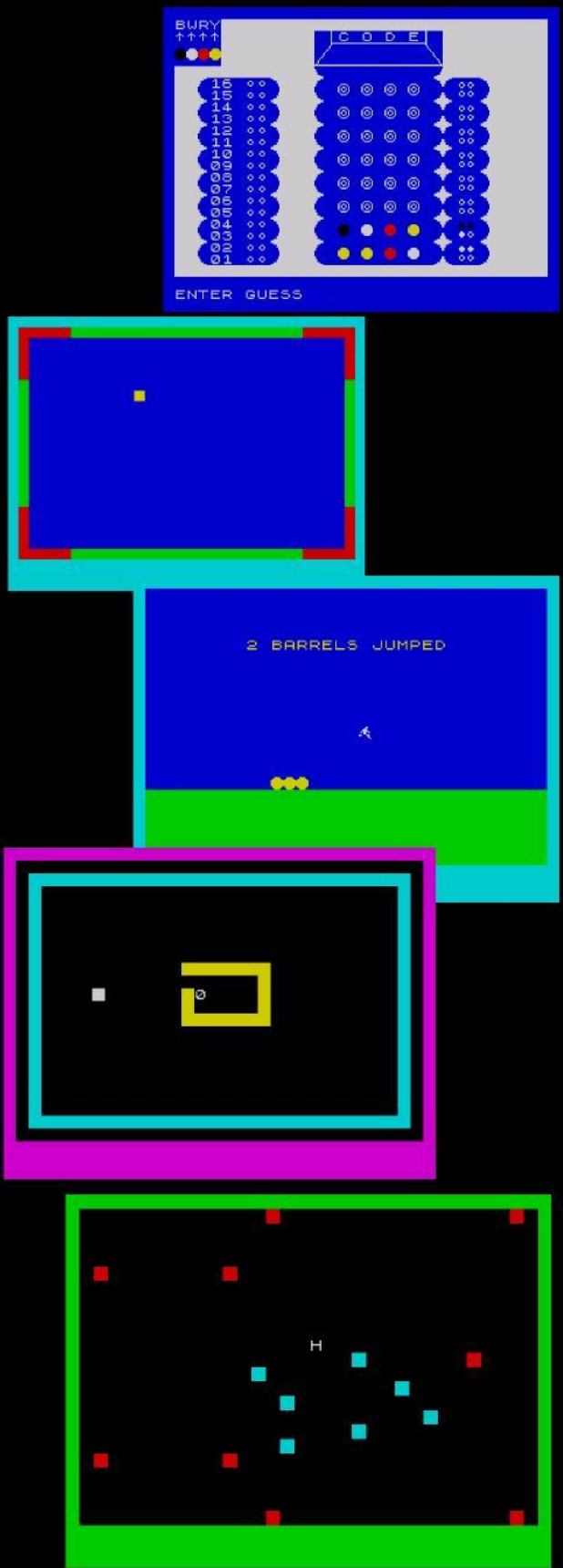
49. Attacker

A white block (the attacker) bounces around the screen, you can make him change direction by 'kicking ' him. You then have to rotate the entrance to your trap so that he goes inside.

50. Space Mission

You control your ship (H) and have to crash into matter (red blocks) and avoid the anti-matter (blue blocks). Each bit of matter you destroy, a bit of anti matter is also destroyed. You cannot crash into anti-matter. The collision detection is atrocious, but not a bad game.

Phew - THE END !



SPECTRUM MEANS COLOUR

Part 2

PIOTR SZYMANSKI CONTINUES HIS SEARCH FOR COLOUR

GAMES BY VARIOUS AUTHORS

Image by prof4d

Let's start this chapter with a real Spectrum classic Stop The Express by Hudson Soft. It was released in 1983 but is still playable today. You are a Special Agent and have to stop the train taken over by evil Redmen.

Astro Marine Corps by Creepsoft is an excellent shoot'em-up with graphics of highest quality. Scrolling game area, animated background, many alien enemies, huge bosses and a lot of colours.

Pandora released only one game called Into The Eagle's Nest. It was a Gauntlet clone with interesting scenario (infiltrating Nazi's castle) and big colourful graphics.

Bronx by Animagic is a beat'em-up with big fighters. You are an Arnold Schwarzenegger look-alike and have to defeat five opponents (including Rambo and Mr. T but with different names).

Gargoyle Games were known for their graphic adventures. In 1986 they changed their name to Faster Than Light and started creating arcade games. The first one was Light Force, fast shoot'em-up with vertical scrolling.

FEATURE

Somewhere in space there is an evil Bydo Empire that wants to destroy mankind. But we are not defenceless because we have a modern spacecraft called R-9. Is one spacecraft enough to defeat aliens? Play R-Type by Software Studios to check it out.

In Karnov by Mr. Micro you are Jinborov "Karnov" Karnovski, ex Russian circus strongman, and your task is to retrieve a stolen treasure.

Turrican is one of the best games for C64 and Amiga. The Spectrum version created by Probe is also very good. All original levels are included and presented with impressive graphics. The only drawback is poor sound.

Golden Axe by Probe Software was converted from the coin-op. It's a fantasy beat'em-up where you can choose one of three warriors and start restoring peace in the land of Yuria.

Space Gun by Images is another version of Operation Wolf. This time the action takes place not on Earth but in space - you must rescue the hostages from a spaceship. This is 128k only game with nice touches like blasting off alien limbs.

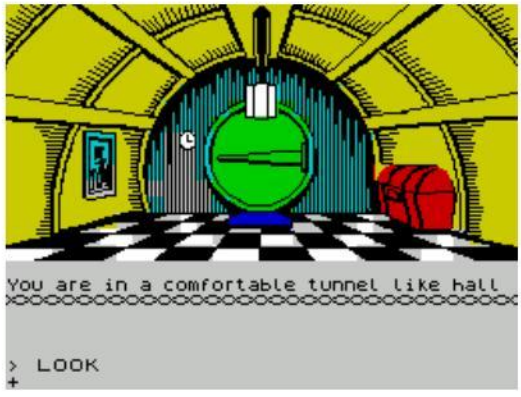
Imagine a modern version of Ghost n Goblins mixed with X-Files. If you want to see it, you must play Invasion Of The Zombie Monsters by RELEVO Videogames. Ned's girlfriend was kidnapped by big Demon and he must rescue her. Equipped with power gathered from the moon ray Ned starts his mission against zombies and aliens.

In Grell & Falla by Big Red Software you try to tidy up the Enchanted Gardens. It's an arcade-adventure with cute graphics where you control a fairy or a dwarf.

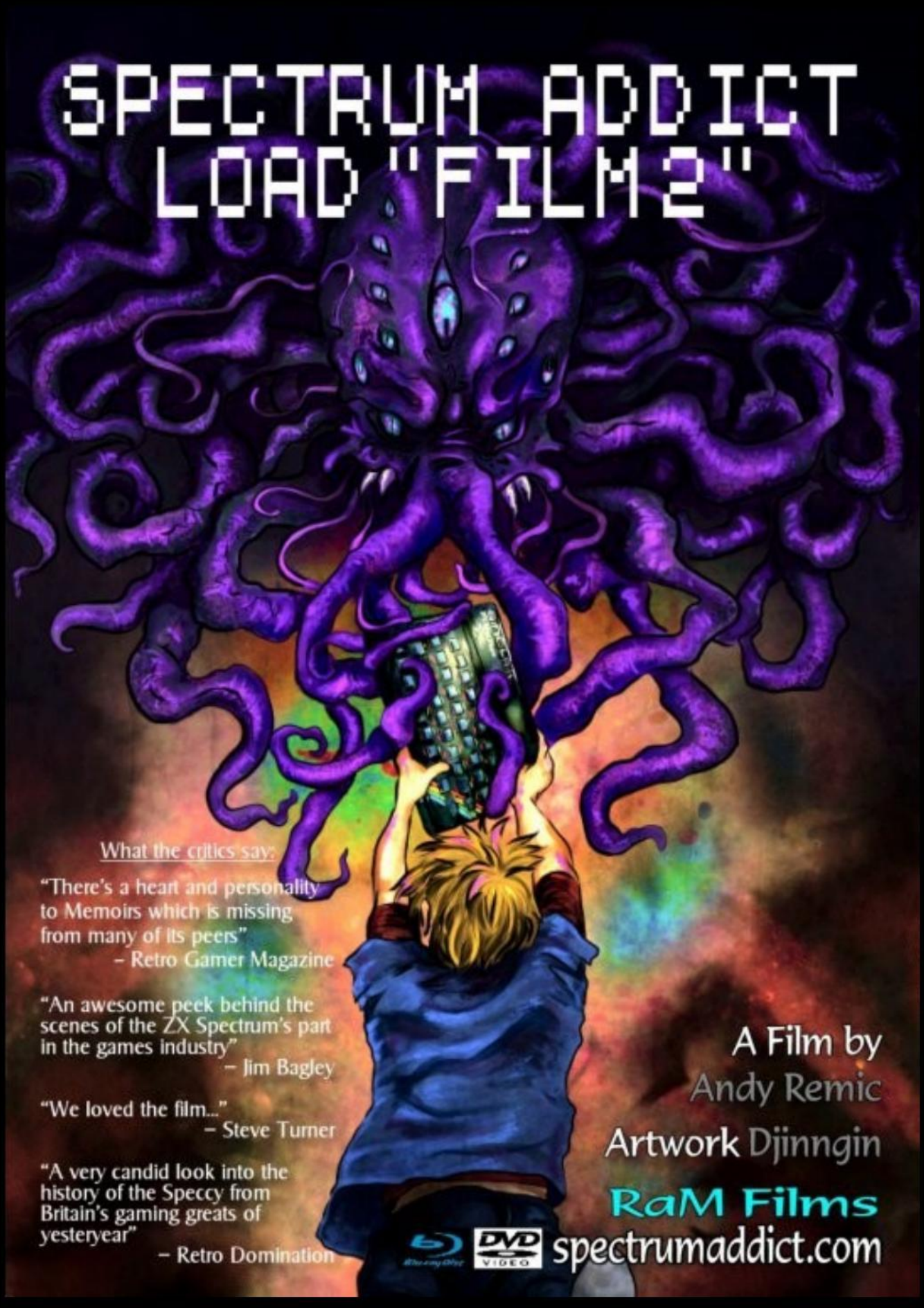
Tornado ECR by Banzai Programming is an aerial shoot'em-up with a lot of big and detailed planes. The scenario is a bit odd - you can select a modern jet and fight against WWII planes - but the action is really fast.

Car racing can also be colourful and Mastertronic's Super Stock Car is a good example. It's a racing game viewed from above with four famous cars competing on 6 tracks.

The first game in this chapter was the oldest, so the last one will be the newest. In 2015 people from World Of Spectrum forum created a 128k version of a classic adventure game The Hobbit. This new version has much improved graphics, they are detailed, colourful and fast. I know that graphics in this game are not animated, there are no sprites etc., but it's really hard to find other adventure game for Spectrum with better graphics.



More next issue...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– Jim Bagley
"We loved the film..."
– Steve Turner
"A very candid look into the history of the Speccy from Britain's gaming greats of yesteryear"
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